DOCUMENT RESUME

ED 200 771 CE 028 555

AUTHOR Jepsen, David A.; And Others
TITLE The Effects of Problem-Solving Training on Adolescents' Career Exploration and Career Decision-Making.
PUB DATE Apr 81
NOTE 24p.; Paper presented at the Annual Meeting of the American Educational Research Association (Los Angeles, CA, April 13-17, 1981). Angeles, CA, April 13-17, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Analysis of Covariance; Career Choice; *Career Exploration; Career Guidance; Counseling Theories; Decision Making; *Decision Making Skills; *Field Trips; Grade 11; High Schools; Information Seeking; *Problem Solving; *Program Effectiveness; Research Methodology; Testing; *Workshops
IDENTIFIERS Career Development Inventory; Career Information Request; Career Information Search Survey; Extent of Planning Scale

ABSTRACT

A study was conducted to compare the effects of three career guidance methods on eleventh graders' career exploratory and decision-making behaviors. The study involved 66 volunteers (reduced by attrition to 48) who attended one of three six-hour, one-day sessions: guided field trips: cognitive decision-making training: or behavioral problem-solving training. Two self-report inventories, the Career Information Search Survey (CISS) and the Extent of Planning (EP) scale from the Career Development Inventory, and one specially designed behavioral measure, the Career Information Request, (CIR) were employed to assess career exploration. Career exploratory behavior was defined as the frequency of self-initiated career information-seeking incidents. Career decision-making behavior was defined as the extent of knowledge about and application of decision-making principles to career-related problems. Measures were taken to separate any observed effects of the career guidance methods from academic achievement level. A one-way multiple analysis of covariance (ANCOVE) statistic was computed for treatment effects. No demonstrable effects resulting from the one-day workshops were found, but the study has implications for guidance practices and research procedures. (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED200771

The Effects of Problem-Solving Training on Adolescents' Career Exploration and Career Decision-Making

David A. Jepsen

Richard Dustin

Russell Miars

The University of Iowa

No demonstrable effects due to one-day problem-solving groups and field trips were found but implications for guidance practices and research procedures are discussed.

Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, April, 1981.

CE 028 555

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

David A. Jepsen

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

The Effects of Problem-Solving Training on Adolescents' Career Exploration and Career Decision-Making

Career exploratory behavior and career decision-making behavior are distinctive and important dimensions of adolescent career development. The former is the activity involved when generating and testing information about oneself and the world of work (Jordaan, 1963). The latter is defined as the thought involved when processing information about oneself and particular vocational options in relation to personal goals (Jepsen & Dilley, 1975). In the behavioral sequence called career development, decision-making involves organizing and deliberating about the information gathered through exploration. The two behavior sets are important to counselors because they represent a large portion of the behavior that career guidance activities attempt to influence.

Because these behaviors are distinguishable, then interventions effective in promoting exploratory behavior may differ from those effective in stimulating decision-making behavior. Furthermore since exploration is largely overt behavior, then active behavioral methods, e.g., social modelling and positive reinforcement, seem likely to be effective methods to increase exploration. Likewise, since decision-making is largely cognitive behavior, then cognitive methods, e.g., teaching "rules" to govern behavior, may increase the application of decision-making principles in organizing and deliberating about vocational options.

The purpose of this study was to examine the effect on 11th graders' career exploratory and decision-making behaviors of three career guidance methods, conducted during one day; guided field trips, cognitive and behavioral problem-solving training. Three specific research questions were addressed in sequence:

1. Did students experiencing a one-day career guidance workshop score higher on measures of career exploration and career decision-making than comparable students who had not?
2. Did students experiencing problem-solving training score higher on the same measures than students taking guided field trips?
3. Did behavioral and cognitive methods have differential effects on measures of career exploration and career decision-making behaviors?
    a. Did students experiencing structured problem-solving training with a behavioral focus score higher on career exploration measures than students experiencing similar training content with a cognitive focus?
    b. Did students experiencing a cognitive focus score higher on measures of career decision-making than students in groups with a behavioral focus?

The findings should have importance for vocational counselors as well as career development theorists. The results will evaluate whether special, one-day workshops can demonstrate an observable

impact on career development and to what extent structured problem-solving training can demonstrate an observable advantage over guided field trips which take considerably less counselor preparation. Finally, the findings will help understand whether exploration and decision-making are differentially affected by problem-solving training methods.

Background

Research has shown that 11th graders' career exploration and career decision-making have been affected by career guidance methods. Brief behavioral counseling methods have demonstrated an advantage over inactive control groups for increasing 11th graders' career exploratory behavior as several studies have shown (e.g., Krumboltz & Thoresen, 1965; Meyer, Strowig, & Hosford, 1970). Conversely decision-making skills were taught to 9th graders over 5 sessions emphasizing strategies (Evans & Cody, 1969). Directed instruction and counseling about career decision-making had a greater impact on college students' decision-making behavior than did individual counseling (Smith & Evans, 1973). Discussing decisions for an imaginary friend had a greater impact on 11th graders' career decision complexity than discussing their own decisions (Warner & Jepsen, 1979). Several cognitive methods have been effective on career exploration (e.g., Young, 1979; Prediger & Noeth, 1979), but behavioral methods have not proven effective on career decision-making behaviors (e.g., Bergland, Quartrano, & Lindquist, 1975). Nevertheless, there is a tendency for behavioral methods to effect exploration and cognitive methods to effect decision-making.

The conceptual distinction between exploratory and decision-making behaviors has generally been supported empirically. Jepsen and Prediger (in press) found that, for a group of 11th graders, scores from three career exploration inventories loaded on a different factor than did scores from several decision-making inventories. This replicated findings from earlier studies with single inventories (Forrest & Thompson, 1974; ACT, 1974).

Methodology

Sample and Procedures. Forty-eight 11th graders from one parochial school in a small midwestern city volunteered to participate in the study as a part of a one-day career development workshop. Thirty were female and 18 male. The group had a strong academic background with a mean composite score of 19.7 on the Iowa Tests of Educational Development (ITED) which is about 1/2 standard deviation above the state average. When invited to the one-day workshop on the University campus 66 of 71 11th graders indicated their intention to participate. These 66 were assigned randomly to 4 groups, 16 each to Groups A and B and 17 each to Groups C and D. Each group was randomly assigned to a particular experimental condition but students were not informed about this until the day of the workshop. Group A served as a pre-test control group and, one week prior to the workshop, 13 members completed the four inventories measuring exploratory and career decision-making behavior. Although some Group A members completed the post-tests only these pre-test data

were used in subsequent analyses. Group B was assigned to guided field trips as the active control condition. Groups C and D were assigned respectively to the treatment conditions called Cognitive Problem-Solving Training and Behavioral Problem-Solving Training. On the workshop day Group A joined Group B on the field trips.

Fifty-three students arrived for the workshop, 12 in Group A, 11 in B, 17 in C, and 13 in D. Groups in the three treatment conditions were separated for workshop activities. At the end of the day each group wrote a brief reaction (to their activities) and participated in the Career Information Request activity where they could "sign up" for more career information. Four weeks later all 53 were asked to complete the four inventories measuring career exploration and decision-making. The 43 who did so included 6, 9, 14, and 12 members of Groups A through D respectively.

Instruments. Two self-report inventories, the Career Information Search Survey (CISS) and The Extent of Planning (EP) scale from the Career Development Inventory, Form III (CDI) (Super & Thompson, 1979), and one specially-designed behavioral measure, called the Career Information Request (CIR), were employed to assess career exploration. Career exploratory behavior was defined as the frequency of self-initiated career information-seeking incidents, e.g., requests for occupational briefs, talks with workers, sending letters for information.

The Career Information Search Survey (CISS) is a supply-response questionnaire asking students to list each incident where they sought career information during the past month. Twelve questions covered specific categories used in previous studies with 11th grade students (e.g., Krumboltz & Thoresen, 1964; Meyer, Strowig & Hosford, 1970). The CISS was scored by counting the separate incidents reported.

The EP scale, shortened for a previous study (Jepsen & Prediger, in press) from 30 to 25 items by permission of the author, measures the planfulness dimension of adolescent vocational maturity (Super & Thompson, 1979). Students rate how much time compared to their peers they have given to thinking about and implementing career-relevant activities. The EP scale score is the sum of all such ratings.

The behavioral technique, CIR, assessed the number of student requests for career information. Immediately after completing the workshop activities, each group was taken separately to a room and presented with a display of 7 different career information sources, e.g., pamphlets, computer-assisted career information system, an interest inventory, etc., along with sign-up sheets. The number of separate "sign-ups" was scored as an index of career exploration.

Career decision-making behavior was defined as the extent of knowledge about and application of decision-making principles to career-related problems, e.g., how often students could identify the principles, and how complex were their own self-described

career decisions. Three scales assessed decision-making: a shortened version of the Career Decision-Making (CDM) scale from the CDI and two scales from a supply-response questionnaire called the Career Decision-Making Inventory (CDMI). The 20 CDM items required students to recognize decision-making principles or apply them to case vignettes. Scores were the number of correct answers. The CDMI questions asked students to describe their post-high school plans. Raters categorized responses into two scales, Number of Reasons for top three choices and Number of Outcomes anticipated from the first choice plan. Reduced versions of scales have been shown to change over the high school years (Jepsen, 1975) and have been influenced by similar career guidance methods (Warner & Jepsen, 1979).

CISS and CDMI score reliabilities were estimated in terms of generalizability of scores across raters. Trained raters have shown acceptable generalizability estimates of .92, .65, and .72 respectively for scales similar to the CISS and the Reasons and Outcomes scales on the CDMI (Jepsen & Grove, in press). CDI scale reliabilities, estimated for 11th graders by coefficient alpha, were .92 for the EP scale and .71 for the CDM scale (Thompson & Super, 1978). Since the CIR was a new procedure, no reliability estimates were available.

The CDI scales were correlated with ability measures for 11th graders' samples (Super & Thompson, 1979). Jepsen and Prediger (in press) found that the CDM scale correlated .40 and .53 with ITED reading and math sub-tests. Since the dependent measures in this

study were likely to be influenced by academic achievement background, these effects were controlled by employing students' ITED composite scores as a covariate. With student permission, the composite ITED scores for the ITED battery administered about 5 months prior to the workshop were obtained from school records.

Thus any observed effects of the career guidance methods will be independent of academic achievement level.

Experimental Conditions. Three separate career guidance methods were employed as experimental conditions in a one-day (8 a.m. to 4 p.m.) workshop format. M.A.-level counseling students especially trained in one method served as leaders. The first, guided field trips, was designed to illustrate distinctive work environments through 1-hour visits to three selected work settings. Groups A and B met with three leaders who led a discussion on work environments, explained the nine settings available, escorted groups to the settings, and answered students' questions throughout the day. Students chose from one of three settings for each of three time periods. Settings included a botany greenhouse, hydraulics laboratory, art museum, child care center, and computer center.

The two problem-solving training methods were distinguished as cognitive and behavioral. Each group met in separate rooms with two co-leaders. Both groups followed the same five structured

activities: introduction to the day's activities; warm-up exercises; a written test booklet; systematic instruction in five problem-solving steps; and a "contract" to contact information sources during the next 30 days.

The cognitive treatment involved a direct teaching method. The problem-solving steps summarized by Heppner (1978) were taught as general principles to be applied by the student to his/her own problem. The leaders assumed students did not know these steps before the workshop. The steps were (1) Develop a problem-solving orientation; (2) Define the problem concretely; (3) Generate several alternative solutions; (4) Choose the best solution after weighing the pros and cons; and (5) Verify the chosen solution. First, an overview of the five steps was presently orally and visually. Then each of the five steps was presented alone and clarified through discussion. The students were trained to discriminate between proper and improper applications of the principles through example cases in the booklets. The booklets contained case vignettes about fictitious teenagers. The cases were used for discrimination training on the last four principles of problem-solving. Then students wrote the content of their own problems in the booklets. The general orientation ended with students writing in their own "problem."

The focus of the second step was on having the students write their problem in specific terms. In section 3, the Ss listed alternative solutions in their booklets. The training and discussion for Step 4 revolved around sources of information as a means of making

decisions. The booklet provided space for each student to list potential information sources. Finally, the booklet concluded with a contract form onto which each student wrote which information sources s/he would contact by the end of the 30-day follow-up. The sample vignette that follows was used to illustrate Step 2, making a problem more specific.

The Case of Urma

Urma's problem listed earlier was "She's not sure she knows where she wants to go to college."

She has other problems: She doesn't know whether she likes "The Who' or "The Eagles" best. She thinks she's too tall to be attractive. Although she does date, her concern is the guy may "drop" her.

Urma's specific problem: She wishes she were as <u>certain</u> as her friends seem to be as to where to go to college.

The <u>behavioral</u> treatment focused on eliciting the proper applications of the same problem-solving steps from the students. The leaders assumed students would recognize the steps but could not perform them. A video-taped role model served as the behavioral cue. Through the discussions, group leaders shaped each student's description of his/her problem-solving behavior to conform to the specifications of each appropriate step.

A video-taped model of a female college student provided Ss with an overall orientation to the five steps. The model described her uncertainty upon graduation from high school, her need to specify her problem, her search for alternative solutions, etc.

For each problem-solving step, the video-taped model elaborated on what she had done in such a way as to exemplify the proper execution of the step. At the end of these video vignettes, the group leaders elicited reactions and comments from the group. Verbal shaping of correct applications was used by both leaders, with such comments as "Good," "That's right," "Very good." Finally, each student wrote out the appropriate step in his/her own booklet.

Leaders encouraged students to focus on the video model's behavior and to emulate that behavior in accordance with the five steps. No principles were read or described in this treatment. Rather, the leaders were encouraged to focus questions back to the model, e.g., "What did she do on tape?" The booklet ended with a contract form. Each student filled out which information sources s/he would contact during the next 30 days.

Analysis. The data were arranged into the four groups: pre-workshop data for Group A and post-workshop data for Groups B, C, and D. Table 1 presents the means and standard deviation for all measures by group.

Insert Table 1 about here

A one-way multiple analysis of covariance (ANCOVA) statistic was computed for treatment effects. The covariate was the ITED composite score. The criterion was the linear combination of the scores measuring career exploration or career decision-making. Since the CIR was not included in the pretest measures, all comparisons

involving Group A used two career exploration measures. All other tests used three measures. Significance tests were evaluated against the Wilks lambda criterion and $p \leq .05$ was required for significant differences.

The three research questions were addressed by three independent, i.e., orthogonal, planned comparisons. The first compared the pre-workshop data collected from Group A to the combined post-workshop data from Groups B, C, and D in order to test for the effects of the one-day workshop. The second comparison was between Group B and the combined Groups C and D to test for the effects of problem-solving training compared to field trips. Finally, Groups C and D were compared to test for the effects of behavioral versus cognitive group methods.

Seventeen univariate ANCOVA tests were conducted post hoc in an effort to understand the impact of experimental conditions on the individual measures. These analyses were an exploratory follow-up to the planned comparisons in order to provide information for future research rather than contribute to the research questions in this study.

Results

The multiple ANCOVA results and statistically significant post hoc univariate ANCOVA results are summarized in Table 2.

Insert Table 2 about here

Comparisons of Group A to Groups B, C, and D yielded no significant differences. Apparently there were no demonstrable effects due to the one-day workshop. Comparisons of the field trip group (B) to the problem-solving groups (C and D) showed no significant differences.

The difference on combined exploration variables was not significant, F (3,30) = 2,73, $p < .07$, but did favor the problem-solving groups. The two problem-solving groups did not differ on either set of multiple criteria. Apparently neither problem-solving method showed a clear advantage on the criteria.

The univariate ANCOVA tests yielded are significant difference : The cognitive problem-solving students scored higher than the behavioral problem-solving students on the one behavioral measure, the Career Information Request, F (1,22) = 4.98, $p < .04$. This finding was contrary to what was expected based on prior theory and research. The combined problem-solving groups scored somewhat higher than the field trip group on the CDI, Extent of Planning scale, though the difference was not statistically significant, F (1,22) = 3.26, $p < .08$. Apparently the problem-solving groups rated as somewhat higher (though not at a statistically significant level) on their involvement in planning activities. The combination of this factor and a small advantage in the Career Information Request was enough to give the problem-solving groups a slight (though , again, not significant) advantage on the combined career exploration measures, F (3,30) = 2.73, $p < .07$.

Discussion

The purpose of this study was to compare the effects of three career guidance methods on 11th graders' career exploratory and decision-making behaviors. Recommended procedures for improved career counseling research have been followed. Behavioral change was measured by multiple methods, including both self-report and behavioral procedures as recommended by Oliver (1979). This enabled generalizations about progressive gains on the major dimensions of adolescent career development. As recommended by several authorities (Oliver, 1979; Gottfredson, 1978), an experimental design including statistical control for academic performances was employed. The study was conducted in a field setting under conditions closely approximating those faced by vocational counselors. Finally, multivariate as well as univariate analyses were used so that more conditions could be controlled within a single experiment. Clearly the study was planned to take advantage of recommended procedures in behavioral research methods so that results could be interpreted with confidence by researchers and counselors.

Despite such planning, a few conditions imposed limiations on the interpretation of the findings. The sample was not very large nor was it clearly representative of 11th graders other than those from one school. The attrition from 66 original volunteers to 48 participants is difficult to explain. Reasons given included illness, unforeseen conflicting activities and a change of interest. The only systematic different noted was that more males than females dropped out. Since there is some evidence that females show greater

gains that males on career exploration and decision-making over the high school years (Jepsen, 1975), differential dropouts in this small-sample study may have influenced the results. The treatments were administered during a one-day, six-hour session due to constraints on time and money. Treatments would undoubtedly be more powerful if session length were shortened, if several sessions were spaced over a few weeks, e.g., two hours every other day for three weeks, and if the total treatment time were lengthened and included more practice, e.g., behavioral rehearsals. Finally, the treatments were administered by only one set of leaders hence the treatment effects were confounded by leader effects.

The lack of difference among groups in the three career guidance methods indicates that the hypothesized differential treatment effects did not occur as predicted. Perhaps time-limited and specific methods result in general career development gains in smaller increments than these measures can detect. Students' informal written evaluations were generally very positive for all three methods. The only clearly dissatisfied participants were in the behavioral method (Group D). Apparently students felt positive about the methods even though the measures could detect no differences.

Apparently the cognitive problem-solving method had a greater effect than did the behavioral method on career exploration as measured by the Career Information Request procedure. This was somewhat surprising because previous research had shown behavioral methods to be consistent influencers of exploratory behavior (e.g., Krumboltz & Thoresen, 1964). Did the negative attitude of the behavioral group influence their immediate CIR response? Does the behavioral method need revision? The behavioral treatment effects relied heavily on

cues from the video-taped role model. Recall that the model described her past problem-solving experiences. Perhaps a more powerful stimulus would be video-tapes of a model doing the problem-solving, e.g., talking to people, reading materials, thinking aloud. The expense of producing such materials must be weighed against the potential gains.

Students' informal evaluations at the end of the workshop suggested another explanation for the results. When asked what they had learned about career decision-making, the students in Groups C and D often wrote about the problem-solving steps but Groups A and B did not. Perhaps the problem-solving treatments effected short-term recall but were not powerful enough to stimulate applications to personal problems during the month following the workshop. Post-workshop follow-up activities may have helped students to use the principles on their own career decisions.

In summary, there are several important implications for counselors and researchers. Problem-solving training appears to be a promising career guidance method. Students enjoyed it and seemed to comprehend the ideas. Nevertheless it did not significantly effect measured career development behavior. This leads to another implication for counselors: student satisfaction with career guidance doesn't necessarily reflect growth. Future research studies should attempt to incorporate the strong features of this design while working to overcome its limitations. Specifically, researchers should

seek to increase sample size, reduce attrition, and increase the power of the treatments. Clearly, career guidance needs the best behavioral research methods in order to develop the knowledge basic to improved practices.

Table 1

Means and Standard Deviations on Career Exploration and Career Decision-Making Variables by Group

Variable		Group* A(N=13)	Group B(N=10)	Group C(N=14)	Group D(N=11)
Career Information Requests (CIR)	M	--	2.80	3.57	2.46
	SD	--	1.62	1.34	1.37
Information-Seeking	M	5.23	7.60	5.79	5.82
	SD	3.19	5.89	3.36	2.23
CDI, Extent of Planning (EP)	M	76.77	67.00	80.14	77.00
	SD	18.10	13.83	18.22	11.84
Reasons	M	2.46	3.70	3.36	2.64
	SD	0.78	2.00	1.65	0.81
Outcomes	M	4.08	4.20	4.29	3.55
	SD	2.10	1.32	1.33	1.57
CDI, Career Decision-Making (CDM)	M	12.62	11.30	12.00	12.09
	SD	3.33	4.83	3.90	3.24
Iowa Tests of Educational Development (ITED)	M	18.15	18.40	19.93	21.82
	SD	5.40	3.53	6.47	4.69

*Scores on pre-workshop measures. All other groups were tested four weeks after the workshop.

Table 2

Summary of ANCOVA's on Career Exploration and Decision-Making by Planned Comparisons

Comparison	Multivariate Criteria	df	F	p ≤
A vs. B, C, D	Exploration ⓐ	2,44	0.64	n.s.
A vs. B, C, D	Decision-Making	3,43	1.85	n.s.
B vs. C, D	Exploration	3,30	2.73	.07, C,D > B
B vs. C, D	Decision-Making	3,30	0.54	n.s.
C vs. D	Exploration	3,20	1.71	n.s.
C vs. D	Decision-Making	3,20	1.01	n.s.

Comparison	Univariate Criteria	df	F	p ≤
B vs. C, D	CDI, Extent of Planning	1,32	3.26	.08, C,D > B
C vs. D	Career Information Requests	1,22	4.98	.04, C > D

ⓐ Includes 2 variables; all other multiple criteria include 3 variables.

References

American College Testing Program. Assessment of Career Development Handbook (User's guide and report of research). Boston: Houghton Mifflin, 1974.

Bergland, B. W., Quartrano, L. A., & Lindquist, G. W. Group social models and structured interaction in teaching decision-making. Vocational Guidance Quarterly, 1975, 24, 28-36.

Evans, J. R. & Cody, J. J. Transfer of decision-making skills learned in a counseling-like setting to similar and dissimilar situations. Journal of Counseling Psychology, 1969, 16, 427-432.

Forrest, D. J. & Thompson, A. S. The Career Development Inventory. In D. E. Super (Ed.), Measuring vocational maturity for counseling and evaluation. Washington: NVGA, 1974.

Gottfredson, G. Evaluating vocational interventions. Journal of Vocational Behavior, 1978, 13, 252-254.

Heppner, P. P. A review of problem-solving literature and its relationship to the counseling process. Journal of Counseling Psychology, 1978, 25, 366-375.

Jepsen, D. A. Occupational decision development of the high school years. Journal of Vocational Behavior, 1975, 7, 225-237.

Jepsen, D. A. & Dilley, J. S. Vocational decision-making models: A review and comparative analysis. Review of Educational Research, 1974, 44, 331-349.

Jepsen, D. A. & Grove, W. Generalizability of vocational decision-making questionnaire items and scales across raters and occasions. Journal of Vocational Behavior (in press).

Jepsen, D. A. & Prediger, D. J. Dimensions of adolescent career development: A multi-instrument analysis. Journal of Vocational Behavior (in press).

Jordaan, J. P. Exploratory behavior: The formulation of self and occupational concepts. In D. E. Super, R. Starishevsky, N. Matlin, & J. P. Jordaan, Career Development: Self-Concept Theory. New York: CEEB, 1963.

Krumboltz, J. D., & Thoresen, C. E. The effect of behavioral counseling in group and individual settings on information seeking behavior. Journal of Counseling Psychology, 1964, 11, 324-333.

Meyer, J. B., Strowig, R. W., & Hostord, R. E. Behavioral reinforcement counseling with rural high school youth. Journal of Counseling Psychology, 1970, 17, 127-132.

Oliver, L. W. Outcome measurement in career counseling research. Journal of Counseling Psychology, 1979, 26, 217-226.

Prediger, D. J. & Noeth, R. J. Effectiveness of brief counseling intervention in stimulating vocational exploration. Journal of Vocational Behavior, 1979, 14, 352-368.

Smith, R. D. & Evans, J. R. Comparison of experimental group guidance and individual counseling as facilitators of vocational development. Journal of Counseling Psychology, 1973, 20, 202-208.

Super, D. E. & Thompson, A. S. A six-scale, two-factor measure of adolescent career or vocational maturity. Vocational Guidance Quarterly, 1979, 28, 6-15.

Warner, S. G. & Jepsen, D. A. Differential effects of conceptual level and group counseling format on adolescent career decision-making processes. Journal of Counseling Psychology, 1979, 26, 497-503.

Young, R. A. The effects of value confrontation and reinforcement counseling on the career planning attitudes and behavior of adolescent males. Journal of Vocational Behavior, 1979, 15, 1-11.